CLAIMS

1. A method for the generation of transgenic plants of the genus Linum comprising
   (a) introducing a recombinant DNA molecule comprising at least one selectable marker gene which confers resistance to at least one antibiotic into plant cells;
   (b) induction of transgenic callus from the cells of (a); and
   (c) regeneration of transgenic plants from the induced callus, wherein
      (i) after callus induction and/or culturing the calli on a medium containing a first antibiotic
      (ii) the calli or shoots regenerated therefrom are transferred onto a medium containing a second antibiotic which is different from the first antibiotic.

2. The method of claim 1, wherein said plant is Linum usitatissimum.

3. The method of claim 1 or 2, wherein said plant is flax or linseed.

4. The method of any one of claims 1 to 3, wherein at least one of said first and second antibiotic are selected from the group consisting of kanamycin, paromycin, neomycin, gentamycin, G-418, streptomycin, spectinomycin and imidazole.

5. The method of any one of claims 1 to 4, wherein said selectable marker gene encodes neomycin phosphotransferase, streptomycin phosphotransferase or aminoglycoside-3-adenyltransferase, or is a gene conferring resistance to imidazole.

6. The method of any one of claims 1 to 5, wherein said first antibiotic is kanamycin and said second antibiotic is G-418.

7. The method of any one of claims 1 to 6, wherein the concentration of said first antibiotic is in the range of 150 to 200 mg/l.

8. The method of any one of claims 1 to 7, wherein the concentration of said second antibiotic 40 to 100 mg/l.

9. The method of any one of claims 1 to 8, wherein said plant cells are comprised in the hypocotyl of plants.

10. The method of claim 9, wherein said plants are derived from synchronized germinating seeds.

11. The method of any one of claims 1 to 10, wherein the recombinant DNA molecule is introduced by a method comprising:
    (a) inoculation with Agrobacterium tumefaciens;
    (b) particle bombardment; or
    (c) microinjection.

12. The method of claim 11, wherein said inoculation with Agrobacterium tumefaciens is performed in the presence of acetosyringone.

13. The method of any one of claims 1 to 12, wherein said recombinant DNA molecule comprises a binary vector.

14. The method of any one of claims 1 to 13, wherein said medium containing said first antibiotic contains at least 0,05 mg/l auxin and at least 0,002 mg/l cytokinin.

15. The method of claim 14, wherein said auxin is NAA.

16. The method of claim 14 or 15, wherein said cytokinin is TDZ and/or BAP.

17. The method of any one of claims 14 to 16, wherein the concentration of auxin and cytokinin is TDZ (0,002 mg/l) and NAA (0,05 mg/l) or BAP (2 mg/l) and NAA (0.1 mg/l).

18. The method of any one of claims 1 to 17, wherein said medium containing said second antibiotic is substantially free of auxins and/or cytokinins.

19. The method of any one of claims 1 to 18, wherein the recombinant DNA molecule further comprises a nucleotide sequence encoding a polypeptide, peptide, antisense RNA, sense RNA, viral RNA or ribozyme.

20. The method of claim 19, wherein said nucleotide sequence is operatively linked to transcription and/or expression control sequences.

21. The method of any one of claims 1 to 20, wherein said recombinant DNA molecule comprises at least one further selectable and/or scorable marker gene.

22. Transgenic plant cells, callus, tissue or a plant obtainable by the method of any one of claims 1 to 21 or plant cells, callus, tissue or a plant derived therefrom comprising at least one recombinant DNA molecule.

23. Harvestable parts or propagation material of a plant of claim 22 comprising plant cells of claim 22.

24. Use of a recombinant DNA molecule as defined in any one of claims 1 to 21, Agrobacterium tumefaciens, antibiotics or hormones for the method of any one of claims 1 to 21.

25. Use of plant cells, plant tissue or plants of claim 22 for plant breeding, for a method for the identification of chemical and/or biological compounds, for the production of male and/or female sterile plants, disease-resistant plants, plants

with modified fiber composition or for plants with specific chemical or biological compounds produced tissue specifically.